



# Sequence Listing

<110> Kainoh, Mie  
Tanaka, Toshiaki  
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Leu Asp Val Arg Gln Ile Pro Ala Ala Gln Glu Gln Pro Phe Ile Val	
775 780 785	
agc aac caa aac aaa agg tta aca ttt tca gta aca ctg aaa aat aaa	2496
Ser Asn Gln Asn Lys Arg Leu Thr Phe Ser Val Thr Leu Lys Asn Lys	
790 795 800	
agg gaa agt gca tac aac act gga att gtt gtt gat ttt tca gaa aac	2544
Arg Glu Ser Ala Tyr Asn Thr Gly Ile Val Val Asp Phe Ser Glu Asn	
805 810 815	
ttg ttt ttt gca tca ttc tcc cta ccg gtt gat ggg aca gaa gta aca	2592
Leu Phe Phe Ala Ser Phe Ser Leu Pro Val Asp Gly Thr Glu Val Thr	
820 825 830 835	
tgc cag gtg gct gca tct cag aag tct gtt gcc tgc gat gta ggc tac	2640
Cys Gln Val Ala Ala Ser Gln Lys Ser Val Ala Cys Asp Val Gly Tyr	
840 845 850	
cct gct tta aag aga gaa caa cag gtg act ttt act att aac ttt gac	2688
Pro Ala Leu Lys Arg Glu Gln Gln Val Thr Phe Thr Ile Asn Phe Asp	
855 860 865	
ttc aat ctt caa aac ctt cag aat cag gcg tct ctc agt ttc caa gcc	2736
Phe Asn Leu Gln Asn Leu Gln Asn Gln Ala Ser Leu Ser Phe Gln Ala	
870 875 880	
tta agt gaa agc caa gaa gaa aac aag gct gat aat ttg gtc aac ctc	2784
Leu Ser Glu Ser Gln Glu Glu Asn Lys Ala Asp Asn Leu Val Asn Leu	
885 890 895	
aaa att cct ctc ctg tat gat gct gaa att cac tta aca aga tct acc	2832
Lys Ile Pro Leu Leu Tyr Asp Ala Glu Ile His Leu Thr Arg Ser Thr	
900 905 910 915	
aac ata aat ttt tat gaa atc tct tcg gat ggg aat gtt cct tca atc	2880
Asn Ile Asn Phe Tyr Glu Ile Ser Ser Asp Gly Asn Val Pro Ser Ile	
920 925 930	
gtg cac agt ttt gaa gat gtt ggt cca aaa ttc atc ttc tcc ctg aag	2928
Val His Ser Phe Glu Asp Val Gly Pro Lys Phe Ile Phe Ser Leu Lys	
935 940 945	
gta aca aca gga agt gtt cca gta agc atg gca act gta atc atc cac	2976
Val Thr Thr Gly Ser Val Pro Val Ser Met Ala Thr Val Ile Ile His	
950 955 960	
atc cct cag tat acc aaa gaa aag aac cca ctg atg tac cta act ggg	3024
Ile Pro Gln Tyr Thr Lys Glu Lys Asn Pro Leu Met Tyr Leu Thr Gly	
965 970 975	
gtg caa aca gac aag gct ggt gac atc agt tgt aat gca gat atc aat	3072
Val Gln Thr Asp Lys Ala Gly Asp Ile Ser Cys Asn Ala Asp Ile Asn	
980 985 990 995	
cca ctg aaa ata gga caa aca tct tct tct gta tct ttc aaa agt gaa	3120
Pro Leu Lys Ile Gly Gln Thr Ser Ser Ser Val Ser Phe Lys Ser Glu	
1000 1005 1010	



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Asn Phe Arg His Thr Lys Glu Leu Asn Cys Arg Thr Ala Ser Cys Ser	
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aat gtt acc tgc tgg ttg aaa gac gtt cac atg aaa gga gaa tac ttt	3216
Asn Val Thr Cys Trp Leu Lys Asp Val His Met Lys Gly Glu Tyr Phe	
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gtt aat gtg act acc aga att tgg aac ggg act ttc gca tca tca acg	3264
Val Asn Val Thr Thr Arg Ile Trp Asn Gly Thr Phe Ala Ser Ser Thr	
1045 1050 1055	
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Phe Gln Thr Val Gln Leu Thr Ala Ala Ala Glu Ile Asn Thr Tyr Asn	
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cct gag ata tat gtg att gaa gat aac act gtt acg att ccc ctg atg	3360
Pro Glu Ile Tyr Val Ile Glu Asp Asn Thr Val Thr Ile Pro Leu Met	
1080 1085 1090	
ata atg aaa cct gat gag aaa gcc gaa gta cca aca gat ccc gag	3405
Ile Met Lys Pro Asp Glu Lys Ala Glu Val Pro Thr Asp Pro Glu	
1095 1100 1105	
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agggcagcaa ggcaggcccc gtctgcctct tcaccggag cctctgccc cccactcat	3525
gctcagggag aggggtcttct ggctttttcc caggctctgg gcaggcacag gctaggtgcc	3585
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atccgggagg accctgcccc tgacctaaagc ccacccaaa ggccaaactc tccactccct	3705
cagctcggac accttctctc ctcccagatt ccagtaactc ccaatcttct ctctgca	3762
gag ccc aaa tct tgt gac aaa act cac aca tgc cca ccg tgc cca	3807
Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro	
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tgcatccagg gacaggcccc agccgggtgc tgacacgtcc acctccatct ctctctca	3925
gca cct gaa ctc ctg ggg gga ccg tca gtc ttc ctc ttc ccc cca aaa	3973
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys	
1125 1130 1135	
ccc aag gac acc ctc atg atc tcc egg acc cct gag gtc aca tgc gtg	4021
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val	
1140 1145 1150	
gtg gtg gac gtg agc cac gaa gac cct gag gtc aag ttc aac tgg tac	4069
Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr	
1155 1160 1165	
gtg gac ggc gtg gag gtg cat aat gcc aag aca aag ccg cgg gag gag	4117
Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu	
1170 1175 1180 1185	
cag tac aac agc acg tac cgg gtg gtc agc gtc ctc acc gtc ctg cac	4165
Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His	
1190 1195 1200	
cag gac tgg ctg aat ggc aag gag tac aag tgc aag gtc tcc aac aaa	4213
Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys	
1205 1210 1215	
gcc ctc cca gcc ccc atc gag aaa acc atc tcc aaa gcc aaa	4255
Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys	
1220 1225 1230	
ggtgggaccc gtgggggtgcg agggccacat ggacagaggc cggtcggcc caccctctgc	4315
cctgagagtg accgctgtac caacctctgt cctaca ggg cag ccc cga gaa cca	4369
Gly Gln Pro Arg Glu Pro	

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 Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln  
 1240 1245 1250  
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 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala  
 1255 1260 1265  
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 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr  
 1270 1275 1280 1285  
 cct ccc gtg ctg gat tcc gac ggc tcc ttc ttc ctc tac agc aag ctc 4561  
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu  
 1290 1295 1300  
 acc gtg gac aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc 4609  
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser  
 1305 1310 1315  
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 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser  
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Gly Pro Glu Ala Ala Leu Arg Glu Thr Val Met Leu Leu Leu Cys Leu  
-20 -15 -10

Gly Val Pro Thr Gly Arg Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu  
-5 1 5

Leu Tyr Gln Gly Pro His Asn Thr Leu Phe Gly Tyr Ser Val Val Leu  
10 15 20 25

His Ser His Gly Ala Asn Arg Trp Leu Leu Val Gly Ala Pro Thr Ala  
30 35 40

Asn Trp Leu Ala Asn Ala Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg  
45 50 55

Cys Arg Ile Gly Lys Asn Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu  
60 65 70

Gly Ser Pro Asn Gly Glu Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg  
75 80 85

Asp Asn Gln Trp Leu Gly Val Thr Leu Ser Arg Gln Pro Gly Glu Asn  
90 95 100 105

Gly Ser Ile Val Thr Cys Gly His Arg Trp Lys Asn Ile Phe Tyr Ile  
110 115 120

Lys Asn Glu Asn Lys Leu Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro  
125 130 135

Asp Leu Arg Thr Glu Leu Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp  
140 145 150

Tyr Val Lys Lys Phe Gly Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile  
155 160 165

Ser Ser Phe Tyr Thr Lys Asp Leu Ile Val Met Gly Ala Pro Gly Ser  
170 175 180 185

Ser Tyr Trp Thr Gly Ser Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys  
190 195 200

Tyr Lys Ala Phe Leu Asp Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr  
205 210 215

Leu Gly Tyr Ser Val Gly Ala Gly His Phe Arg Ser Gln His Thr Thr  
220 225 230

Glu	Val	Val	Gly	Gly	Ala	Pro	Gln	His	Glu	Gln	Ile	Gly	Lys	Ala	Tyr	235	240	245
Ile	Phe	Ser	Ile	Asp	Glu	Lys	Glu	Leu	Asn	Ile	Leu	His	Glu	Met	Lys	250	255	260
Gly	Lys	Lys	Leu	Gly	Ser	Tyr	Phe	Gly	Ala	Ser	Val	Cys	Ala	Val	Asp	270	275	280
Leu	Asn	Ala	Asp	Gly	Phe	Ser	Asp	Leu	Leu	Val	Gly	Ala	Pro	Met	Gln	285	290	295
Ser	Thr	Ile	Arg	Glu	Glu	Gly	Arg	Val	Phe	Val	Tyr	Ile	Asn	Ser	Gly	300	305	310
Ser	Gly	Ala	Val	Met	Asn	Ala	Met	Glu	Thr	Asn	Leu	Val	Gly	Ser	Asp	315	320	325
Lys	Tyr	Ala	Ala	Arg	Phe	Gly	Glu	Ser	Ile	Val	Asn	Leu	Gly	Asp	Ile	330	335	340
Asp	Asn	Asp	Gly	Phe	Glu	Asp	Val	Ala	Ile	Gly	Ala	Pro	Gln	Glu	Asp	350	355	360
Asp	Leu	Gln	Gly	Ala	Ile	Tyr	Ile	Tyr	Asn	Gly	Arg	Ala	Asp	Gly	Ile	365	370	375
Ser	Ser	Thr	Phe	Ser	Gln	Arg	Ile	Glu	Gly	Leu	Gln	Ile	Ser	Lys	Ser	380	385	390
Leu	Ser	Met	Phe	Gly	Gln	Ser	Ile	Ser	Gly	Gln	Ile	Asp	Ala	Asp	Asn	395	400	405
Asn	Gly	Tyr	Val	Asp	Val	Ala	Val	Gly	Ala	Phe	Arg	Ser	Asp	Ser	Ala	410	415	420
Val	Leu	Leu	Arg	Thr	Arg	Pro	Val	Val	Ile	Val	Asp	Ala	Ser	Leu	Ser	430	435	440
His	Pro	Glu	Ser	Val	Asn	Arg	Thr	Lys	Phe	Asp	Cys	Val	Glu	Asn	Gly	445	450	455
Trp	Pro	Ser	Val	Cys	Ile	Asp	Leu	Thr	Leu	Cys	Phe	Ser	Tyr	Lys	Gly	460	465	470
Lys	Glu	Val	Pro	Gly	Tyr	Ile	Val	Leu	Phe	Tyr	Asn	Met	Ser	Leu	Asp	475	480	485
Val	Asn	Arg	Lys	Ala	Glu	Ser	Pro	Pro	Arg	Phe	Tyr	Phe	Ser	Ser	Asn	490	495	500
Gly	Thr	Ser	Asp	Val	Ile	Thr	Gly	Ser	Ile	Gln	Val	Ser	Ser	Arg	Glu	510	515	520

Ala	Asn	Cys	Arg	Thr	His	Gln	Ala	Phe	Met	Arg	Lys	Asp	Val	Arg	Asp	
			525					530					535			
Ile	Leu	Thr	Pro	Ile	Gln	Ile	Glu	Ala	Ala	Tyr	His	Leu	Gly	Pro	His	
		540					545					550				
Val	Ile	Ser	Lys	Arg	Ser	Thr	Glu	Glu	Phe	Pro	Pro	Leu	Gln	Pro	Ile	
	555					560					565					
Leu	Gln	Gln	Lys	Lys	Glu	Lys	Asp	Ile	Met	Lys	Lys	Thr	Ile	Asn	Phe	
570					575					580					585	
Ala	Arg	Phe	Cys	Ala	His	Glu	Asn	Cys	Ser	Ala	Asp	Leu	Gln	Val	Ser	
				590					595					600		
Ala	Lys	Ile	Gly	Phe	Leu	Lys	Pro	His	Glu	Asn	Lys	Thr	Tyr	Leu	Ala	
			605					610					615			
Val	Gly	Ser	Met	Lys	Thr	Leu	Met	Leu	Asn	Val	Ser	Leu	Phe	Asn	Ala	
	620						625					630				
Gly	Asp	Asp	Ala	Tyr	Glu	Thr	Thr	Leu	His	Val	Lys	Leu	Pro	Val	Gly	
	635					640					645					
Leu	Tyr	Phe	Ile	Lys	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Gln	Ile	Asn	Cys	
650					655				660						665	
Glu	Val	Thr	Asp	Asn	Ser	Gly	Val	Val	Gln	Leu	Asp	Cys	Ser	Ile	Gly	
				670					675					680		
Tyr	Ile	Tyr	Val	Asp	His	Leu	Ser	Arg	Ile	Asp	Ile	Ser	Phe	Leu	Leu	
			685					690					695			
Asp	Val	Ser	Ser	Leu	Ser	Arg	Ala	Glu	Glu	Asp	Leu	Ser	Ile	Thr	Val	
		700					705					710				
His	Ala	Thr	Cys	Glu	Asn	Glu	Glu	Glu	Met	Asp	Asn	Leu	Lys	His	Ser	
	715					720					725					
Arg	Val	Thr	Val	Ala	Ile	Pro	Leu	Lys	Tyr	Glu	Val	Lys	Leu	Thr	Val	
730					735					740					745	
His	Gly	Phe	Val	Asn	Pro	Thr	Ser	Phe	Val	Tyr	Gly	Ser	Asn	Asp	Glu	
				750					755					760		
Asn	Glu	Pro	Glu	Thr	Cys	Met	Val	Glu	Lys	Met	Asn	Leu	Thr	Phe	His	
			765					770					775			
Val	Ile	Asn	Thr	Gly	Asn	Ser	Met	Ala	Pro	Asn	Val	Ser	Val	Glu	Ile	
		780					785					790				
Met	Val	Pro	Asn	Ser	Phe	Ser	Pro	Gln	Thr	Asp	Lys	Leu	Phe	Asn	Ile	
						800					805					

Leu Asp Val Gln Thr Thr Thr Gly Glu Cys His Phe Glu Asn Tyr Gln  
 810 815 820 825  
 Arg Val Cys Ala Leu Glu Gln Gln Lys Ser Ala Met Gln Thr Leu Lys  
 830 835 840  
 Gly Ile Val Arg Phe Leu Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys  
 845 850 855  
 Ile Lys Ala Asp Pro His Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys  
 860 865 870  
 Met Glu Ser Gly Lys Glu Ala Ser Val His Ile Gln Leu Glu Gly Arg  
 875 880 885  
 Pro Ser Ile Leu Glu Met Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile  
 890 895 900 905  
 Arg Ala Thr Gly Phe Pro Glu Pro Asn Pro Arg Val Ile Glu Leu Asn  
 910 915 920  
 Lys Asp Glu Asn Val Ala His Val Leu Leu Glu Gly Leu His His Gln  
 925 930 935  
 Arg Pro Lys Arg Tyr Phe Thr Asp Pro Glu Glu Pro Lys Ser Cys Asp  
 940 945 950  
 Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 955 960 965  
 Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 970 975 980 985  
 Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 990 995 1000  
 Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 1005 1010 1015  
 Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
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 Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 1035 1040 1045  
 Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 1050 1055 1060 1065  
 Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 1070 1075 1080  
 Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
 1085 1090 1095



Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
1100 1105 1110

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
1115 1120 1125

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
1130 1135 1140 1145

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
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Gly Lys

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<213> Homo sapien

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Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys  
15 20 25

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys  
30 35 40

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile  
45 50 55 60

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr  
65 70 75

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile His  
80 85 90

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro  
95 100 105

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp  
110 115 120

Leu 125	Tyr	Tyr	Leu	Met	Asp 130	Leu	Ser	Tyr	Ser	Met 135	Lys	Asp	Asp	Leu	Glu 140
Asn	Val	Lys	Ser	Leu 145	Gly	Thr	Asp	Leu	Met 150	Asn	Glu	Met	Arg	Arg 155	Ile
Thr	Ser	Asp	Phe 160	Arg	Ile	Gly	Phe	Gly 165	Ser	Phe	Val	Glu	Lys 170	Thr	Val
Met	Pro	Tyr 175	Ile	Ser	Thr	Thr	Pro 180	Ala	Lys	Leu	Arg	Asn 185	Pro	Cys	Thr
Ser	Glu 190	Gln	Asn	Cys	Thr	Thr	Pro 195	Phe	Ser	Tyr	Lys 200	Asn	Val	Leu	Ser
Leu 205	Thr	Asn	Lys	Gly	Glu 210	Val	Phe	Asn	Glu	Leu 215	Val	Gly	Lys	Gln	Arg 220
Ile	Ser	Gly	Asn 225	Leu	Asp	Ser	Pro	Glu	Gly 230	Gly	Phe	Asp	Ala	Ile 235	Met
Gln	Val	Ala	Val 240	Cys	Gly	Ser	Leu 245	Ile	Gly	Trp	Arg	Asn 250	Val	Thr	Arg
Leu	Leu	Val 255	Phe	Ser	Thr	Asp	Ala 260	Gly	Phe	His	Phe	Ala 265	Gly	Asp	Gly
Lys 270	Leu	Gly	Gly	Ile	Val	Leu 275	Pro	Asn	Asp	Gly	Gln 280	Cys	His	Leu	Glu
Asn 285	Asn	Met	Tyr	Thr	Met 290	Ser	His	Tyr	Tyr	Asp 295	Tyr	Pro	Ser	Ile	Ala 300
His	Leu	Val	Gln 305	Lys	Leu	Ser	Glu	Asn	Asn 310	Ile	Gln	Thr	Ile	Phe 315	Ala
Val	Thr	Glu	Glu 320	Phe	Gln	Pro	Val	Tyr 325	Lys	Glu	Leu	Lys	Asn 330	Leu	Ile
Pro	Lys	Ser 335	Ala	Val	Gly	Thr	Leu 340	Ser	Ala	Asn	Ser	Ser 345	Asn	Val	Ile
Gln 350	Leu	Ile	Ile	Asp	Ala	Tyr 355	Asn	Ser	Leu	Ser	Ser 360	Glu	Val	Ile	Leu
Glu 365	Asn	Gly	Lys	Leu 370	Ser	Glu	Gly	Val	Thr	Ile 375	Ser	Tyr	Lys	Ser	Tyr 380
Cys	Lys	Asn	Gly 385	Val	Asn	Gly	Thr	Gly	Glu 390	Asn	Gly	Arg	Lys	Cys 395	Ser
Asn	Ile	Ser	Ile 400	Gly	Asp	Glu	Val	Gln 405	Phe	Glu	Ile	Ser	Ile 410	Thr	Ser

Asn	Lys	Cys	Pro	Lys	Lys	Asp	Ser	Asp	Ser	Phe	Lys	Ile	Arg	Pro	Leu	415	420	425
Gly	Phe	Thr	Glu	Glu	Val	Glu	Val	Ile	Leu	Gln	Tyr	Ile	Cys	Glu	Cys	430	435	440
Glu	Cys	Gln	Ser	Glu	Gly	Ile	Pro	Glu	Ser	Pro	Lys	Cys	His	Glu	Gly	445	450	455
Asn	Gly	Thr	Phe	Glu	Cys	Gly	Ala	Cys	Arg	Cys	Asn	Glu	Gly	Arg	Val	465	470	475
Gly	Arg	His	Cys	Glu	Cys	Ser	Thr	Asp	Glu	Val	Asn	Ser	Glu	Asp	Met	480	485	490
Asp	Ala	Tyr	Cys	Arg	Lys	Glu	Asn	Ser	Ser	Glu	Ile	Cys	Ser	Asn	Asn	495	500	505
Gly	Glu	Cys	Val	Cys	Gly	Gln	Cys	Val	Cys	Arg	Lys	Arg	Asp	Asn	Thr	510	515	520
Asn	Glu	Ile	Tyr	Ser	Gly	Lys	Phe	Cys	Glu	Cys	Asp	Asn	Phe	Asn	Cys	525	530	535
Asp	Arg	Ser	Asn	Gly	Leu	Ile	Cys	Gly	Gly	Asn	Gly	Val	Cys	Lys	Cys	545	550	555
Arg	Val	Cys	Glu	Cys	Asn	Pro	Asn	Tyr	Thr	Gly	Ser	Ala	Cys	Asp	Cys	560	565	570
Ser	Leu	Asp	Thr	Ser	Thr	Cys	Glu	Ala	Ser	Asn	Gly	Gln	Ile	Cys	Asn	575	580	585
Gly	Arg	Gly	Ile	Cys	Glu	Cys	Gly	Val	Cys	Lys	Cys	Thr	Asp	Pro	Lys	590	595	600
Phe	Gln	Gly	Gln	Thr	Cys	Glu	Met	Cys	Gln	Thr	Cys	Leu	Gly	Val	Cys	605	610	615
Ala	Glu	His	Lys	Glu	Cys	Val	Gln	Cys	Arg	Ala	Phe	Asn	Lys	Gly	Glu	625	630	635
Lys	Lys	Asp	Thr	Cys	Thr	Gln	Glu	Cys	Ser	Tyr	Phe	Asn	Ile	Thr	Lys	640	645	650
Val	Glu	Ser	Arg	Asp	Lys	Leu	Pro	Gln	Pro	Val	Gln	Pro	Asp	Pro	Val	655	660	665
Ser	His	Cys	Lys	Glu	Lys	Asp	Val	Asp	Asp	Cys	Trp	Phe	Tyr	Phe	Thr	670	675	680
Tyr	Ser	Val	Asn	Gly	Asn	Asn	Glu	Val	Met	Val	His	Val	Val	Glu	Asn	685	690	695
																		700

Pro Glu Cys Pro Thr Gly Pro Glu Asp Pro Glu Glu Pro Lys Ser Cys  
 705 710 715  
 Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 720 725 730  
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 735 740 745  
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 750 755 760  
 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 765 770 775 780  
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
 785 790 795  
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 800 805 810  
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 815 820 825  
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 830 835 840  
 Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser  
 845 850 855 860  
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 865 870 875  
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 880 885 890  
 Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 895 900 905  
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 910 915 920  
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 925 930 935 940

Pro Gly Lys

<210> 34

<211> 1338

<212> PRT

<213> Homo sapien

<300>

<400> 34

Met	Gly	Pro	Glu	Arg	Thr	Gly	Ala	Ala	Pro	Leu	Pro	Leu	Leu	Leu	Val	-25	-20	-15
Leu	Ala	Leu	Ser	Gln	Gly	Ile	Leu	Asn	Cys	Cys	Leu	Ala	Tyr	Asn	Val	-10	-5	1
Gly	Leu	Pro	Glu	Ala	Lys	Ile	Phe	Ser	Gly	Pro	Ser	Ser	Glu	Gln	Phe	5	10	15
Gly	Tyr	Ala	Val	Gln	Gln	Phe	Ile	Asn	Pro	Lys	Gly	Asn	Trp	Leu	Leu	20	25	30
Val	Gly	Ser	Pro	Trp	Ser	Gly	Phe	Pro	Glu	Asn	Arg	Met	Gly	Asp	Val	40	45	50
Tyr	Lys	Cys	Pro	Val	Asp	Leu	Ser	Thr	Ala	Thr	Cys	Glu	Lys	Leu	Asn	55	60	65
Leu	Gln	Thr	Ser	Thr	Ser	Ile	Pro	Asn	Val	Thr	Glu	Met	Lys	Thr	Asn	70	75	80
Met	Ser	Leu	Gly	Leu	Ile	Leu	Thr	Arg	Asn	Met	Gly	Thr	Gly	Gly	Phe	85	90	95
Leu	Thr	Cys	Gly	Pro	Leu	Trp	Ala	Gln	Gln	Cys	Gly	Asn	Gln	Tyr	Tyr	100	105	110
Thr	Thr	Gly	Val	Cys	Ser	Asp	Ile	Ser	Pro	Asp	Phe	Gln	Leu	Ser	Ala	120	125	130
Ser	Phe	Ser	Pro	Ala	Thr	Gln	Pro	Cys	Pro	Ser	Leu	Ile	Asp	Val	Val	135	140	145
Val	Val	Cys	Asp	Glu	Ser	Asn	Ser	Ile	Tyr	Pro	Trp	Asp	Ala	Val	Lys	150	155	160
Asn	Phe	Leu	Glu	Lys	Phe	Val	Gln	Gly	Leu	Asp	Ile	Gly	Pro	Thr	Lys	165	170	175
Thr	Gln	Val	Gly	Leu	Ile	Gln	Tyr	Ala	Asn	Asn	Pro	Arg	Val	Val	Phe	180	185	190
Asn	Leu	Asn	Thr	Tyr	Lys	Thr	Lys	Glu	Glu	Met	Ile	Val	Ala	Thr	Ser	200	205	210
Gln	Thr	Ser	Gln	Tyr	Gly	Gly	Asp	Leu	Thr	Asn	Thr	Phe	Gly	Ala	Ile	215	220	225
Gln	Tyr	Ala	Arg	Lys	Tyr	Ala	Tyr	Ser	Ala	Ala	Ser	Gly	Gly	Arg	Arg	230	235	240
Ser	Ala	Thr	Lys	Val	Met	Val	Val	Val	Thr	Asp	Gly	Glu	Ser	His	Asp	245	250	255

Gly	Ser	Met	Leu	Lys	Ala	Val	Ile	Asp	Gln	Cys	Asn	His	Asp	Asn	Ile	260	265	270	275
Leu	Arg	Phe	Gly	Ile	Ala	Val	Leu	Gly	Tyr	Leu	Asn	Arg	Asn	Ala	Leu	280	285	290	
Asp	Thr	Lys	Asn	Leu	Ile	Lys	Glu	Ile	Lys	Ala	Ile	Ala	Ser	Ile	Pro	295	300	305	
Thr	Glu	Arg	Tyr	Phe	Phe	Asn	Val	Ser	Asp	Glu	Ala	Ala	Leu	Leu	Glu	310	315	320	
Lys	Ala	Gly	Thr	Leu	Gly	Glu	Gln	Ile	Phe	Ser	Ile	Glu	Gly	Thr	Val	325	330	335	
Gln	Gly	Gly	Asp	Asn	Phe	Gln	Met	Glu	Met	Ser	Gln	Val	Gly	Phe	Ser	340	345	350	355
Ala	Asp	Tyr	Ser	Ser	Gln	Asn	Asp	Ile	Leu	Met	Leu	Gly	Ala	Val	Gly	360	365	370	
Ala	Phe	Gly	Trp	Ser	Gly	Thr	Ile	Val	Gln	Lys	Thr	Ser	His	Gly	His	375	380	385	
Leu	Ile	Phe	Pro	Lys	Gln	Ala	Phe	Asp	Gln	Ile	Leu	Gln	Asp	Arg	Asn	390	395	400	
His	Ser	Ser	Tyr	Leu	Gly	Tyr	Ser	Val	Ala	Ala	Ile	Ser	Thr	Gly	Glu	405	410	415	
Ser	Thr	His	Phe	Val	Ala	Gly	Ala	Pro	Arg	Ala	Asn	Tyr	Thr	Gly	Gln	420	425	430	435
Ile	Val	Leu	Tyr	Ser	Val	Asn	Glu	Asn	Gly	Asn	Ile	Thr	Val	Ile	Gln	440	445	450	
Ala	His	Arg	Gly	Asp	Gln	Ile	Gly	Ser	Tyr	Phe	Gly	Ser	Val	Leu	Cys	455	460	465	
Ser	Val	Asp	Val	Asp	Lys	Asp	Thr	Ile	Thr	Asp	Val	Leu	Leu	Val	Gly	470	475	480	
Ala	Pro	Met	Tyr	Met	Ser	Asp	Leu	Lys	Lys	Glu	Glu	Gly	Arg	Val	Tyr	485	490	495	
Leu	Phe	Thr	Ile	Lys	Lys	Gly	Ile	Leu	Gly	Gln	His	Gln	Phe	Leu	Glu	500	505	510	515
Gly	Pro	Glu	Gly	Ile	Glu	Asn	Thr	Arg	Phe	Gly	Ser	Ala	Ile	Ala	Ala	520	525	530	
Leu	Ser	Asp	Ile	Asn	Met	Asp	Gly	Phe	Asn	Asp	Val	Ile	Val	Gly	Ser	535	540	545	

Pro Leu Glu Asn Gln Asn Ser Gly Ala Val Tyr Ile Tyr Asn Gly His  
 550 555 560

Gln Gly Thr Ile Arg Thr Lys Tyr Ser Gln Lys Ile Leu Gly Ser Asp  
 565 570 575

Gly Ala Phe Arg Ser His Leu Gln Tyr Phe Gly Arg Ser Leu Asp Gly  
 580 585 590 595

Tyr Gly Asp Leu Asn Gly Asp Ser Ile Thr Asp Val Ser Ile Gly Ala  
 600 605 610

Phe Gly Gln Val Val Gln Leu Trp Ser Gln Ser Ile Ala Asp Val Ala  
 615 620 625

Ile Glu Ala Ser Phe Thr Pro Glu Lys Ile Thr Leu Val Asn Lys Asn  
 630 635 640

Ala Gln Ile Ile Leu Lys Leu Cys Phe Ser Ala Lys Phe Arg Pro Thr  
 645 650 655

Lys Gln Asn Asn Gln Val Ala Ile Val Tyr Asn Ile Thr Leu Asp Ala  
 660 665 670 675

Asp Gly Phe Ser Ser Arg Val Thr Ser Arg Gly Leu Phe Lys Glu Asn  
 680 685 690

Asn Glu Arg Cys Leu Gln Lys Asn Met Val Val Asn Gln Ala Gln Ser  
 695 700 705

Cys Pro Glu His Ile Ile Tyr Ile Gln Glu Pro Ser Asp Val Val Asn  
 710 715 720

Ser Leu Asp Leu Arg Val Asp Ile Ser Leu Glu Asn Pro Gly Thr Ser  
 725 730 735

Pro Ala Leu Glu Ala Tyr Ser Glu Thr Ala Lys Val Phe Ser Ile Pro  
 740 745 750 755

Phe His Lys Asp Cys Gly Glu Asp Gly Leu Cys Ile Ser Asp Leu Val  
 760 765 770

Leu Asp Val Arg Gln Ile Pro Ala Ala Gln Glu Gln Pro Phe Ile Val  
 775 780 785

Ser Asn Gln Asn Lys Arg Leu Thr Phe Ser Val Thr Leu Lys Asn Lys  
 790 795 800

Arg Glu Ser Ala Tyr Asn Thr Gly Ile Val Val Asp Phe Ser Glu Asn  
 805 810 815

Leu Phe Phe Ala Ser Phe Ser Leu Pro Val Asp Gly Thr Glu Val Thr  
 820 825 830 835

Cys	Gln	Val	Ala	Ala	Ser	Gln	Lys	Ser	Val	Ala	Cys	Asp	Val	Gly	Tyr		
				840					845					850			
Pro	Ala	Leu	Lys	Arg	Glu	Gln	Gln	Val	Thr	Phe	Thr	Ile	Asn	Phe	Asp		
			855					860					865				
Phe	Asn	Leu	Gln	Asn	Leu	Gln	Asn	Gln	Ala	Ser	Leu	Ser	Phe	Gln	Ala		
		870					875					880					
Leu	Ser	Glu	Ser	Gln	Glu	Glu	Asn	Lys	Ala	Asp	Asn	Leu	Val	Asn	Leu		
	885					890					895						
Lys	Ile	Pro	Leu	Leu	Tyr	Asp	Ala	Glu	Ile	His	Leu	Thr	Arg	Ser	Thr		
900					905					910					915		
Asn	Ile	Asn	Phe	Tyr	Glu	Ile	Ser	Ser	Asp	Gly	Asn	Val	Pro	Ser	Ile		
				920					925					930			
Val	His	Ser	Phe	Glu	Asp	Val	Gly	Pro	Lys	Phe	Ile	Phe	Ser	Leu	Lys		
			935					940					945				
Val	Thr	Thr	Gly	Ser	Val	Pro	Val	Ser	Met	Ala	Thr	Val	Ile	Ile	His		
		950					955					960					
Ile	Pro	Gln	Tyr	Thr	Lys	Glu	Lys	Asn	Pro	Leu	Met	Tyr	Leu	Thr	Gly		
	965					970					975						
Val	Gln	Thr	Asp	Lys	Ala	Gly	Asp	Ile	Ser	Cys	Asn	Ala	Asp	Ile	Asn		
980					985					990					995		
Pro	Leu	Lys	Ile	Gly	Gln	Thr	Ser	Ser	Ser	Val	Ser	Phe	Lys	Ser	Glu		
				1000					1005					1010			
Asn	Phe	Arg	His	Thr	Lys	Glu	Leu	Asn	Cys	Arg	Thr	Ala	Ser	Cys	Ser		
		1015						1020					1025				
Asn	Val	Thr	Cys	Trp	Leu	Lys	Asp	Val	His	Met	Lys	Gly	Glu	Tyr	Phe		
	1030					1035						1040					
Val	Asn	Val	Thr	Thr	Arg	Ile	Trp	Asn	Gly	Thr	Phe	Ala	Ser	Ser	Thr		
	1045					1050				1055							
Phe	Gln	Thr	Val	Gln	Leu	Thr	Ala	Ala	Ala	Glu	Ile	Asn	Thr	Tyr	Asn		
1060				1065						1070					1075		
Pro	Glu	Ile	Tyr	Val	Ile	Glu	Asp	Asn	Thr	Val	Thr	Ile	Pro	Leu	Met		
			1080					1085						1090			
Ile	Met	Lys	Pro	Asp	Glu	Lys	Ala	Glu	Val	Pro	Thr	Asp	Pro	Glu	Glu		
		1095					1100					1105					
Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro		
	1110					1115						1120					



Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
1125 1130 1135

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
1140 1145 1150 1155

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
1160 1165 1170

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr  
1175 1180 1185

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp  
1190 1195 1200

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
1205 1210 1215

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
1220 1225 1230 1235

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys  
1240 1245 1250

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
1255 1260 1265

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
1270 1275 1280

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
1285 1290 1295

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
1300 1305 1310 1315

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
1320 1325 1330

Leu Ser Leu Ser Pro Gly Lys  
1335

SM  
13